

What is claimed is:

1. A database retrieving method, comprising:
making a comparison between a cost required when
retrieval is performed after an index corresponding to
a retrieval condition is generated and a cost required
when entire retrieval is performed;

generating an index corresponding to the
retrieval condition if the cost required when the entire
retrieval is performed is higher as a result of the cost
comparison; and

retrieving a database by using the generated
index.

2. A database retrieving method, comprising:
making a comparison between a cost required when
retrieval is performed after an index corresponding to
a retrieval condition is generated and a cost required
when entire retrieval is performed;

determining whether or not a first index which
satisfies a condition wider than the retrieval condition
exists among already generated indexes, if the cost
required when the entire retrieval is performed is
higher as a result of the cost comparison;

generating a second index which satisfies only the
retrieval condition by using the first index, if the

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first index which satisfies the wider condition exists;
and

retrieving a database by using the generated
second index.

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3. A database retrieving method, comprising:
making a comparison between a cost required when
retrieval is performed after an index corresponding to
a retrieval condition is generated and a cost required
when entire retrieval is performed;

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determining whether or not two or more indexes
which satisfy the retrieval condition by being combined
exist among a plurality of already generated indexes,
if the cost required when the entire retrieval is
performed is higher as a result of the cost comparison;

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generating an index corresponding to the
retrieval condition by combining the two or more indexes,
if the two or more indexes exist; and

retrieving a database by using the generated
index.

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4. The database retrieving method according to
claim 1, further comprising:

managing data of the number of accesses, a
generation date and time, and an update frequency of

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the generated index; and

deleting the generated index according to management status of the data.

5 5. The database retrieving method according to claim 1, further comprising:

determining whether or not an already generated index that is applicable to an access process exists, if an access to the database is a data update or deletion;

10 determining whether or not access performance of the access process is degraded due to existence of the index, if the index exists; and

deleting the index prior to start of the access process, if the access performance is degraded.

15 6. The database retrieving method according to claim 2, further comprising:

managing data of the number of accesses, a generation date and time, and an update frequency of the generated index; and

20 deleting the generated index according to management status of the data.

25 7. The database retrieving method according to claim 2, further comprising:

determining whether or not an already generated index that is applicable to an access process exists, if an access to the database is a data update or deletion;

5 determining whether or not access performance of the access process is degraded due to existence of the index, if the index exists; and

deleting the index prior to start of the access process, if the access performance is degraded.

10 8. The database retrieving method according to claim 3, further comprising:

managing data of the number of accesses, a generation date and time, and an update frequency of the generated index; and

15 deleting the generated index according to management status of the data.

9. The database retrieving method according to claim 3, further comprising:

20 determining whether or not an already generated index that is applicable to an access process exists, if an access to the database is a data update or deletion;

determining whether or not access performance of the access process is degraded due to existence of the index, if the index exists; and

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deleting the index prior to start of the access process, if the access performance is degraded.

10. A computer-readable storage medium on which
5 is recorded a program for causing a computer to execute a process when being used by the computer, said process comprising:

making a comparison between a cost required when
retrieval is performed after an index corresponding to
10 a retrieval condition is generated and a cost required when entire retrieval is performed;

generating an index corresponding to the
retrieval condition if the cost required when the entire
retrieval is performed is higher as a result of the cost
15 comparison; and

retrieving a database by using the generated index.

11. A computer-readable storage medium on which
20 is recorded a program for causing a computer to execute a process when being used by the computer, said process comprising:

making a comparison between a cost required when
retrieval is performed after an index corresponding to
25 a retrieval condition is generated and a cost required

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when entire retrieval is performed;

determining whether or not a first index which satisfies a condition wider than the retrieval condition exists among already generated indexes, if the cost required when the entire retrieval is performed is higher as a result of the cost comparison;

generating a second index which satisfies only the retrieval condition by using the first index, if the first index which satisfies the wider condition exists; and

retrieving a database by using the generated second index.

12. A computer-readable storage medium on which is recorded a program for causing a computer to execute a process when being used by the computer, said process comprising:

making a comparison between a cost required when retrieval is performed after an index corresponding to a retrieval condition is generated and a cost required when entire retrieval is performed;

determining whether or not two or more indexes which satisfy the retrieval condition by being combined exist among a plurality of already generated indexes, if the cost required when the entire retrieval is

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performed is higher as a result of the cost comparison;
generating an index corresponding to the
retrieval condition by combining the two or more indexes,
if the two or more indexes exist; and

5 retrieving a database by using the generated
index.

13. A database retrieving apparatus,
comprising:

10 an access process optimizing unit making a
comparison between a cost required when retrieval is
performed after an index corresponding to a retrieval
condition is generated and a cost required when entire
retrieval is performed;

15 a dynamic index generating unit generating an
index corresponding to the retrieval condition if the
cost required when the entire retrieval is performed
is higher as a result of the cost comparison; and

20 an access processing unit retrieving a database
by using the generated index.

14. A database retrieving apparatus,
comprising:

25 an access process optimizing unit making a
comparison between a cost required when retrieval is

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performed after an index corresponding to a retrieval condition is generated and a cost required when entire retrieval is performed;

an index managing unit determining whether or not
5 a first index which satisfies a condition wider than the retrieval condition exists among already generated indexes, if the cost required when the entire retrieval is performed is higher as a result of the cost comparison;

10 a dynamic index generating unit generating a second index which satisfies only the retrieval condition by using the first index, if the first index which satisfies the wider condition exists; and

an access processing unit retrieving a database
15 by using the generated second index.

15. A database retrieving apparatus, comprising:

an access process optimizing unit making a
20 comparison between a cost required when retrieval is performed after an index corresponding to a retrieval condition is generated and a cost required when entire retrieval is performed;

an index managing unit determining whether or not
25 two or more indexes which satisfy the retrieval

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condition by being combined exist among a plurality of already generated indexes, if the cost required when the entire retrieval is performed is higher as a result of the cost comparison;

5 a dynamic index generating unit generating an index corresponding to the retrieval condition by combining the two or more indexes, if the two or more indexes exist; and

10 an access processing unit retrieving a database by using the generated index.

16. A database retrieving apparatus, comprising:

15 access process optimizing means for making a comparison between a cost required when retrieval is performed after an index corresponding to a retrieval condition is generated and a cost required when entire retrieval is performed;

20 dynamic index generating means for generating an index corresponding to the retrieval condition if the cost required when the entire retrieval is performed is higher as a result of the cost comparison; and

 access processing means for retrieving a database by using the generated index.

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